

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YASUSHI IYECHIKA,
NOBORU FUKUHARA,
TOMOYUKI TAKADA,
and
YOSHINOBU ONO

Appeal No. 1999-2611
Application No. 08/808,537

HEARD: OCTOBER 16, 2001

Before JERRY SMITH, RUGGIERO, and BARRY, Administrative
Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 1 and 2, which are all of the claims pending in the present application.

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The claimed invention relates to an electrode material applied to a III-V group semiconductor compound doped with p-type impurities. The electrode material comprises an alloy of Au and at least one metal selected from the group consisting of Mg and Zn. Appellants assert at pages 2 and 3 of the specification that this particular electrode material exhibits low contact resistance against a III-V group compound semiconductor, and can advantageously be employed as a light emitting device driven at low voltage and having a high luminance.

Claim 1 is illustrative of the invention and reads as follows:

1. An electrode material applied to a III-V group compound semiconductor expressed as a general formula of $\text{In}_x\text{Ga}_y\text{Al}_z\text{N}$, where $x+y+z=1$, $0 \leq x \leq 1$, $0 \leq y \leq 1$, and $0 \leq z \leq 1$, said compound semiconductor being doped with p-type impurities, said electrode material comprising an alloy of Au and at least one metal selected from the group consisting of Mg and Zn, wherein Mg is present in a concentration range of from 0.1 to 2.5% by weight based on the electrode material and Zn is present in a concentration range of from 1 to 30% by weight based on the electrode material.

The Examiner's Answer cites the following references:

Tonai

5,047,832

Sep. 10,
1991

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Watabe et al. (Watabe) 5,414,281 May 09,
1995
(filed Aug. 25, 1993)

Claims 1 and 2 stand finally rejected under
35 U.S.C. § 102(b) as anticipated by or, in the
alternative, under 35 U.S.C. § 103 as obvious over Tonai.

Rather than reiterate the arguments of Appellants
and the Examiner, reference is made to the Brief (Paper
No. 13) and Answer (Paper No. 14) for the respective
details.

OPINION

We have carefully considered the subject matter on
appeal, the rejections advanced by the Examiner, and the
evidence of anticipation and obviousness relied upon by
the Examiner as support for the rejections. We have,
likewise, reviewed and taken into consideration, in
reaching our decision, Appellants' arguments set forth in
the Brief along with the Examiner's rationale in support
of the rejections and arguments in rebuttal set forth in
the Examiner's Answer.

It is our view, after consideration of the record
before us, that the Tonai reference does not fully meet

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the invention as set forth in claims 1 and 2. With respect to the Examiner's obviousness rejection, we are also of the view that the evidence relied upon and the level of skill in

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the particular art would not have suggested to one of ordinary skill in the art the invention as recited in claims 1 and 2. Accordingly, we reverse.

We consider first the rejection of claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Tonai. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.), cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

With respect to appealed claims 1 and 2, the Examiner attempts to read the various limitations on the electrode structure disclosure of Tonai, directing attention to the illustration in Figure 3 and the accompanying description at columns 3 through 5. The Examiner further calls particular attention to column 3,

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lines 48-50 of Tonai which describes

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examples of the p-type III-V compound semiconductor material upon which an alloy is formed as "GaAs, G a P, GaAsP, InSb, GaSb, InP, InGaAsP, and the like." The Examiner takes the position (Answer, page 4) that, although the specific claimed III-V compound is not explicitly disclosed by Tonai, the language "and the like" used by Tonai in describing the composition of the III-V compounds anticipates the nitride containing III-V compound set forth in Appellants' claims.

After reviewing the arguments of record, we are in agreement with Appellants' position as stated in the Brief. In our view, there is no convincing evidence of record that the specific claimed nitride containing III-V compound semiconductor could be predicted as being part of the disclosure of Tonai merely because of the presence of Tonai's "and the like" language. Accordingly, since all of the claim limitations are not present in the disclosure of Tonai, the Examiner's 35 U.S.C. § 102(b) rejection of appealed claims 1 and 2 is not sustained.

Turning to a consideration of the Examiner's alternative rejection of claims 1 and 2 under 35 U.S.C.

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§ 103 based on Tonai, we do not sustain this rejection as well. For the reason discussed supra, we find the Examiner's assertion (Answer, page 4) that a skilled artisan would have obviously interpreted the disclosure of Tonai as describing a nitride containing III-V semiconductor compound as claimed to be unfounded. Further, to the extent that the Examiner is suggesting that, regardless of whether Tonai explicitly discloses the nitride containing III-V compound, a skilled artisan would have found it obvious to modify Tonai to include such a compound, we find no support on the record for such an assertion. We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in a prior art reference, common knowledge or capable of unquestionable demonstration. Precedence of our reviewing court requires this evidence in order to establish a prima facie case. In re Knapp-Monarch Co., 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961); In re Cofer, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966).

As a final commentary, we note that, as part of the

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"Response to argument" portion of the Answer, the Examiner makes reference to the Watabe reference, which discloses a GaN substrate as part of a semiconductor light emitting element, as purportedly providing evidence that Tonai's "and the like" language would include a nitride containing III-V compound. As this reference is not part of the Examiner's rejection of the appealed claims, we decline to rule on the merits of its applicability to the issues to be decided in this appeal. We would point out, however, that the mere existence of a single claimed element in a prior art reference would be unlikely, in the absence of supporting evidence, to be dispositive of the issues of anticipation and obviousness in claims drawn to a combination of elements.

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In summary, we have not sustained either of the
Examiner's rejections of the claims on appeal.
Therefore, the decision of the Examiner rejecting claims
1 and 2 is reversed.

REVERSED

JERRY SMITH)	
Administrative Patent Judge)	
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)	
)	BOARD OF PATENT
JOSEPH F. RUGGIERO)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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)	
LANCE LEONARD BARRY)	
Administrative Patent Judge)	

JFR:hh

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